FIRST U.S. ARMY SAFETY OFFICE

Risk Management Briefing

What is Risk Management?

- Risk Management (RM)- the process of identifying and controlling hazards to protect the force.
- Its five steps represent a logical thought process from which users develop tools, techniques, and procedures for applying risk management in their areas of responsibility.
- It is a continuous process applicable to any situation and environment, both on- and off-duty.

Risk Management Philosophy

- Risk management is the best process for protecting the force. Risk management provides a systematic and logical approach to identifying and controlling hazards that endanger our resources.

- Risk management supports and encourages initiative allowing flexibility, adaptability and eagerness to act. It applies to all elements of force protection in all situations and environments.

Risk Management Philosophy

- Risk Management, when properly applied, enables a commander to maximize operational capabilities while minimizing risk to the force.

- Command has many dimensions and responsibilities. Most would agree that optimizing force capabilities and taking care of soldiers are foremost.

What's New About Risk Management ?

Hasn't risk always been managed?

Yes, But:

- **Not with tested and proven metho**
- **Not systematically and consistentl**
- **Not on a totally integrated basis**
- **Not as a tool for expanding capabil**

he procedures for risk management offer breakthroug improvements in warfighting effectiveness and force protection

Risks Threaten the Force and it's capabilities !

These risks can be minimized if they are effectively detected and controlled

Why is RM Needed?

FM 25-101

“ Historically, more casualties occur in combat due to accidents than from enemy action.”

RM is aggressively practiced at the NTC, resulting in very few accident vs “combat” losses, which the next slide clearly shows:

Battle and Non-Battle Casualties

Rate* per 1,000 soldiers and percent

Army	W.W.II 1942-45	Korea 1950-53	Vietnam 1965-72	DS/S 1990-91	NTC FY93 (BLUFOR-GROUND)
Accident	95.57 56%	120.33 44%	154.66 54%	11.14 75%	2.23 3%
Friendly Fire	1.50*** 1%	3.03*** 1%	2.67*** 1%	.68 5%	7.87**** 9%
Enemy Action	73.61 43%	148.56 55%	131.20 45%	2.90 20%	74.17**** 88%

*Per 12 months for W.W.II, Korea and Vietnam; 14 months for DS/S; per rotation NTC.
** Deaths and injuries (ground and aviation) for entire war/operation.
*** Research based estimate (2% of all direct- and indirect- fire losses).
**** Simulated (MILES) direct fire vehicle kills.

What is an Army Accident?

An accident, including fratricide, is an unplanned event or series of events that results in one or both of the following as a result of Army operations:

- **Damage to Army or non-Army property**
- **Injury, illness or death to Army or non-Army personnel**

Accident Causes

- Materiel Failure/Malfunction
- Environmental Conditions
- Human Error

Materiel Failure/Malfunction

Definition:

A fault in the equipment that keeps it from working as designed, therefore causing or contributing to an accident.

Materiel Failure/Malfunction accounts for only 5% of Army Accidents

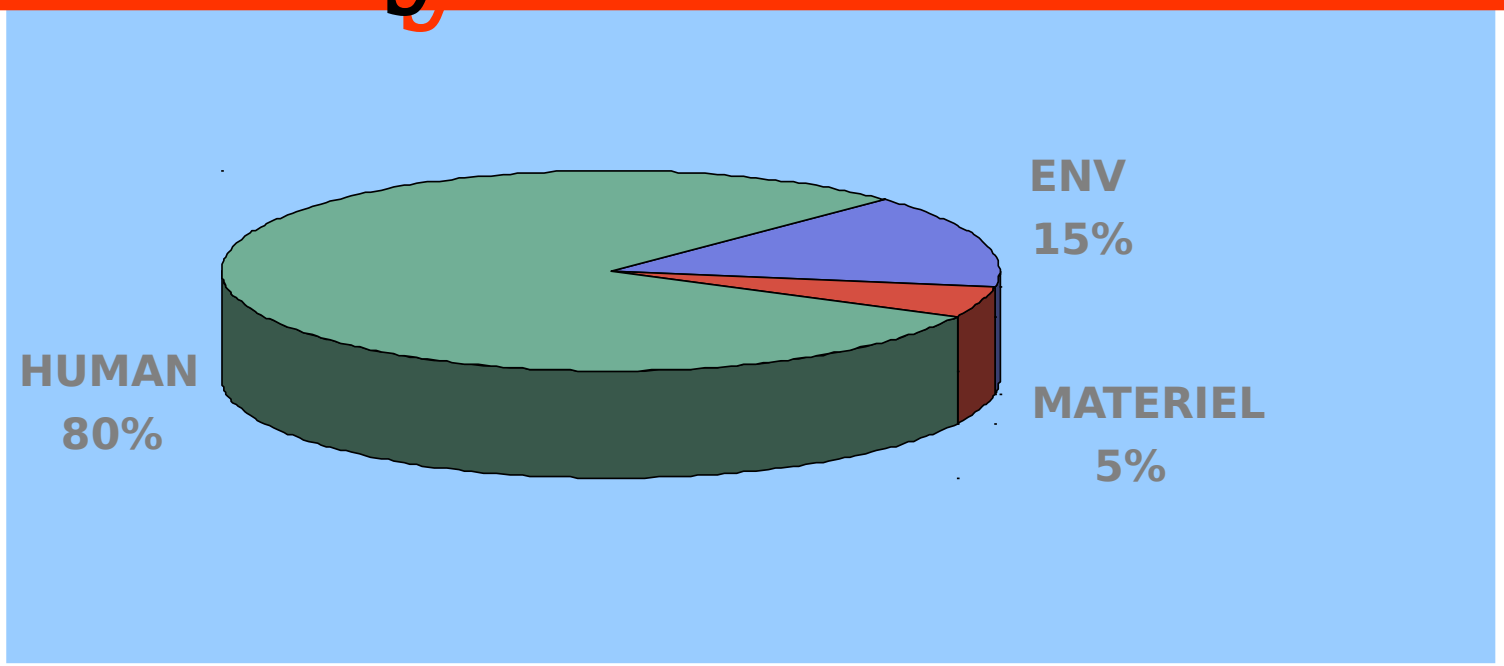
Environmental Conditions

Definition:

Any natural or manmade surroundings that negatively affect performance of individuals, equipment or materiel and causes or contributes to an accident.

Environmental Conditions account for only 15% of Army Accidents.

What Causes Most Army Accidents ?



Historically, **80%** are caused by Human Error

Five Types of Human Error

- Support Failure
- Standards Failure
- Training Failure
- Leader Failure
- Individual Failure

Support Failure

Support Failure - 8%

Equipment/material improperly designed resources/not provided.

Example

The unit tire cage was not properly constructed and the unit does not have a twelve foot extension for the air gage.

Standards Failure

Standards Failure - 8%

Standards/procedures not clear or practical, or
do not exist.

Example

The unit SOP requires the use of a tire cage, however it does not require the use of a twelve foot air gage extension.

Training Failure

Training Failure - 18%

Soldier not trained to known standard (insufficient, incorrect or no training on task).

Example

Soldier has never had any training on how to service split rims and didn’t know that a tire cage and air extension are required for inflation.

Leader Failure

Leader Failure - 18%

Leader does not enforce known standard.

Example

Leader sees the unqualified soldier changing the tire and doesn’t stop him.

Individual Failure

Individual Failure - 48%

Soldier knows and is trained to standard but *elects* not to follow the standard (self-discipline).

Example

Soldier knows there is a requirement to be certified on servicing tires and although he isn't certified, he attempts to service the tire anyway so he won't have to wait for maintenance personnel.

Primary Causes of Army Motor Vehicle Accidents

- **INADEQUATE TRAINING**
- **EXCESSIVE SPEED**
- **VIOLATED PROCEDURES**
  - **Improper and/or No Ground Guiding**
  - **Non-Restraint Use**
  - **Improper Starting/Stopping of Vehicle**
  - **Not Properly Trained**
  - **Driving Too Fast for Conditions**

Primary Causes of Accidents in Field Environments

- **Unsafe Bivouac Activities**
  - **Motor Parks/AA's– improper ground guiding, speed**
  - **Sleeping in unsafe places– under vehicles, on or near tank trails**
  - **Tents/Stoves– improper set-up and use, carbon monoxide**
- **Trips/Falls**
  - **Tent tie downs and other wires not marked**
  - **Fall from vehicle**
- **Heat or Cold Injuries**
  - **Lack of cold weather gear**
  - **Duration of exposure to inclement weather**

Effective Countermeasures

- Proactive Safety Officers/NCOs
- 5-Step Risk Management Training
- Accomplishment of Risk Assessments
- Newcomer Orientations
- Safety Day (Quarterly)
- Safety Publications Readily Available
- POV & Motorcycle Defensive Driving Course
- Provide Quality Training

Provide Quality Training

- **Risk Management Training**
- **Proper Use of Protective Equipment (PPE)**
- **Hazard Communication (HAZCOM)**
  - **CARC Paint, Chemicals, POL Operations**
- **Army Motor Vehicle (AMV) Operations**
- **Safe Operating Procedures**
  - **Eyes, Ears, Hands, Feet, Head, Respiratory System**
  - **Stoves, Extinguishers, POL, Rail Loading, Convoys, Ground Guiding, Tire Changing, Radiation Sources**

Fundamental Rules of Risk Management

- Integrate RM into planning.
- Accept no unnecessary risk.
- The greater the risk, the more senior the final decision maker should be.
- When in the high risk zones, everyone from the commander to the individual must be aware of the risk implications.
- **All** risk variables that can be controlled, **MUST** be controlled.
- By-the-book, disciplined operations are mandatory.

Gambling Versus Risk Taking

The key difference between the

gambler and the bold risk taker is:

- **The risk managing leader can reasonably predict the outcome.**
- **The gambler is only guessing.**

THE RISK MANAGEMENT PROCESS

Five Step RM Process Review

- Identify Hazards
- Assess Hazards
- Develop Controls and Make Risk Decisions
- Implement
- Supervise

- **Remember:** RM is a continuous process applicable to any situation and environment, both on- and off-duty.

Key Definitions

- ***HAZARD***--Any real or potential condition that can cause injury, illness or death of people, or damage/loss of equipment or property
- ***RISK***--Chance of hazard or bad consequences; exposure to chance of injury or loss.
- ***EXPOSURE***--How often, how long
- ***CONTROLS***--Actions taken to eliminate hazards or reduce their risk
- ***RISK ASSESSMENT***--The first two steps of RM process
- ***RESIDUAL RISK***--Level remaining after controls in place
- ***RISK DECISION***--To accept or not the risks (by one responsible for doing that action)

RM Scenario

Situation:

Your unit is to conduct a 12 mile tactical road march with full rucksacks. LD time will be 0500 hrs, and temperatures will rise well into the 90s by 1200 hrs. Your route will be over hilly terrain, and your unit must cross a very busy major highway. 20% of your troops are newly assigned to your unit.

Task:

Use the Risk Management Process to identify hazards and develop control measures. The Risk Management Worksheet and Risk Assessment Matrix are helpful tools to use.

The RM Process – Step One

Step one:

- Identify Hazards-- identify the major events in the operational sequence and the hazards associated with all specified and implied tasks.
- Assess Hazards
- Develop Controls/ Make Decisions
- Implement Controls
- Supervise & Evaluate

Use METT-T to Help Identify Hazards

- Identify Hazards
- Assess Hazards
- Develop Controls and Make Risk Decisions
- Implement Controls
- Supervise

Hazard factors-

- **(METT-T)**
  - **Mission**
  - **Enemy**
  - **Terrain**
  - **Training of personnel**
  - **Time of day**
  - **Equipment**
  - **Weather**
- **Other specific**

Step One

Risk Management Worksheet

Hazards	Initial Risk Level	Controls	Residual Risk Level	How to Implement	How to Supervise
X Major Highwy Equip Ld 90 Degs+ Hills/Walk 20% New Troops 0500 Hrs					

Controls Effective?

Overall risk level after controls are implemented

Low Moderate High Extremely High

Risk Decision Authority

The RM Process – Step Two

Step two:

- Identify Hazards
- Assess Hazards
- Develop Controls/ Make Decisions
- Implement Controls
- Supervise & Evaluate

The Risk Assessment Matrix

- A **risk assessment matrix** can be used to determine risk levels of an identified hazard. Standard terms associated with risk assessment:

  - Probability - **the likelihood that an event will occur.**
  - Severity - **the expected consequence of an event in terms of degree of injury, property damage, or other mission impairing factors (loss of combat power, adverse publicity, etc), that could occur.**

Probability

Probability				
Frequent A	**Likely B**	**Occasional C**	**Seldom D**	**Unlikely E**

- **Frequent** – Occurs often, continuously experienced.
- **Likely** – Occurs several times.
- **Occasional** – Occurs sporadically.
- **Seldom** – Unlikely, but could occur at sometime.
- **Unlikely** – Can assume it will not occur.

Severity

SEVERITY	
Catastrophic	I
Critical	II
Marginal	III
Negligible	IV

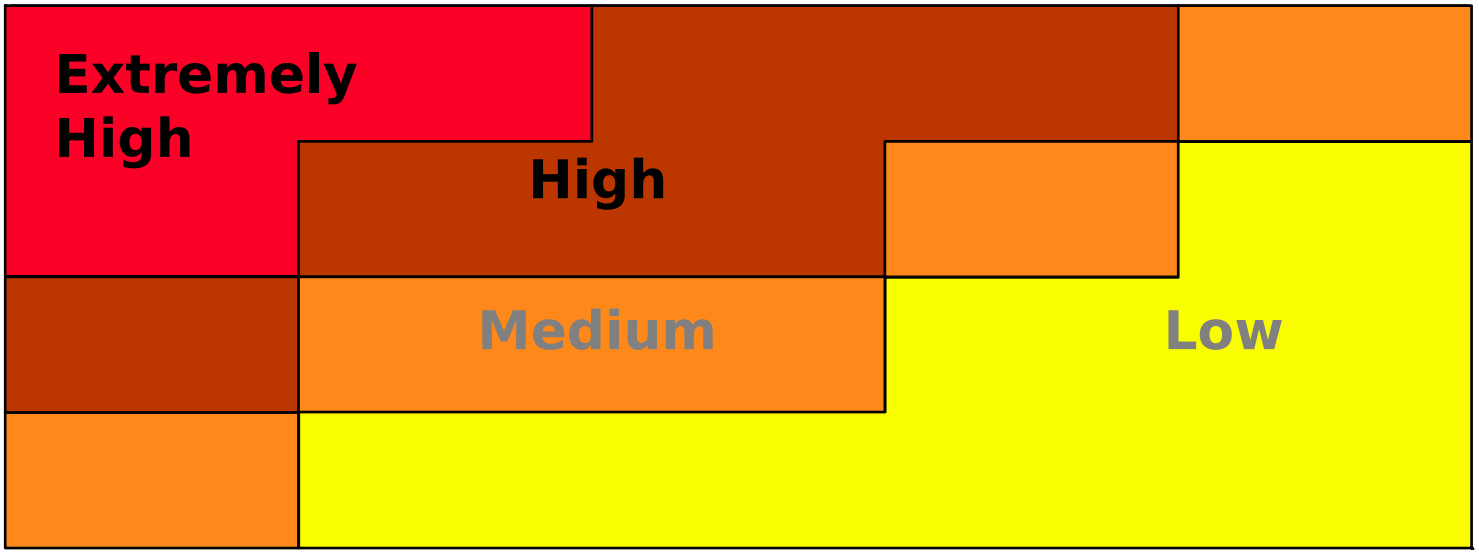
Catastrophic - Death or permanent total disability, system loss, major property damage.

Critical - Permanent partial disability, temporary total disability in excess of 3 months, major system damage, significant property damage.

Marginal - Minor injury, lost workday accident, compensable injury or illness, minor system damage, minor property damage.

Negligible - First aid or minor supportive medical treatment, minor system impairment.

Risk Levels



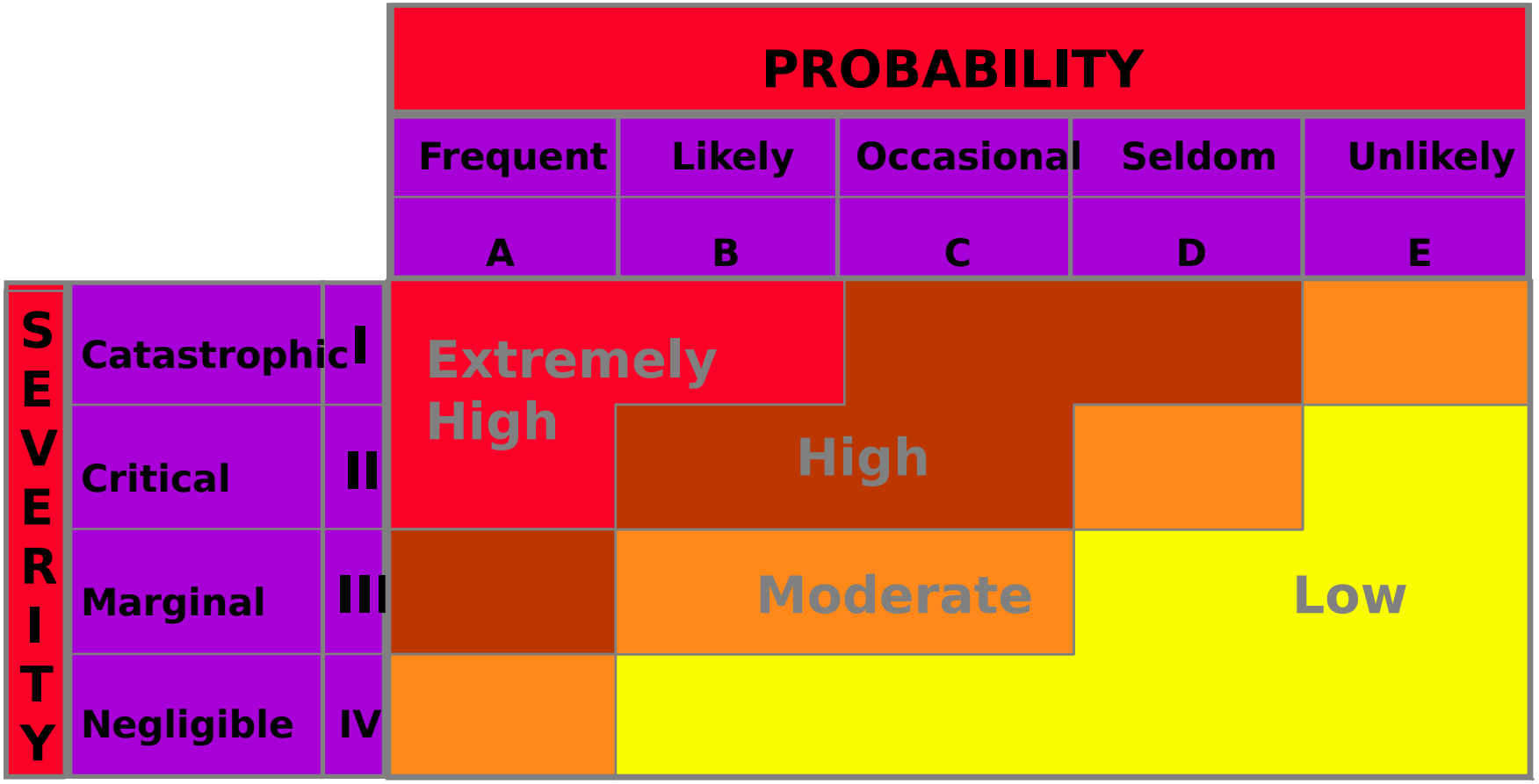
Extremely High Loss of ability to accomplish mission

High Significantly degrades mission capability

Medium Degrades mission capabilities

Low Little or no impact on mission accomplishment

The Risk Assessment Matrix



Step Two

Risk Management Worksheet

Hazards	Initial Risk Level	Controls	Residual Risk Level	How to Implement	How to Supervise
X Major Highwy	H				
Equip Ld	H				
90 Degs+	M				
Hills/Walk	M				
20% New Troops	H				
0500 Hrs	M				

Overall risk level after controls are implemented

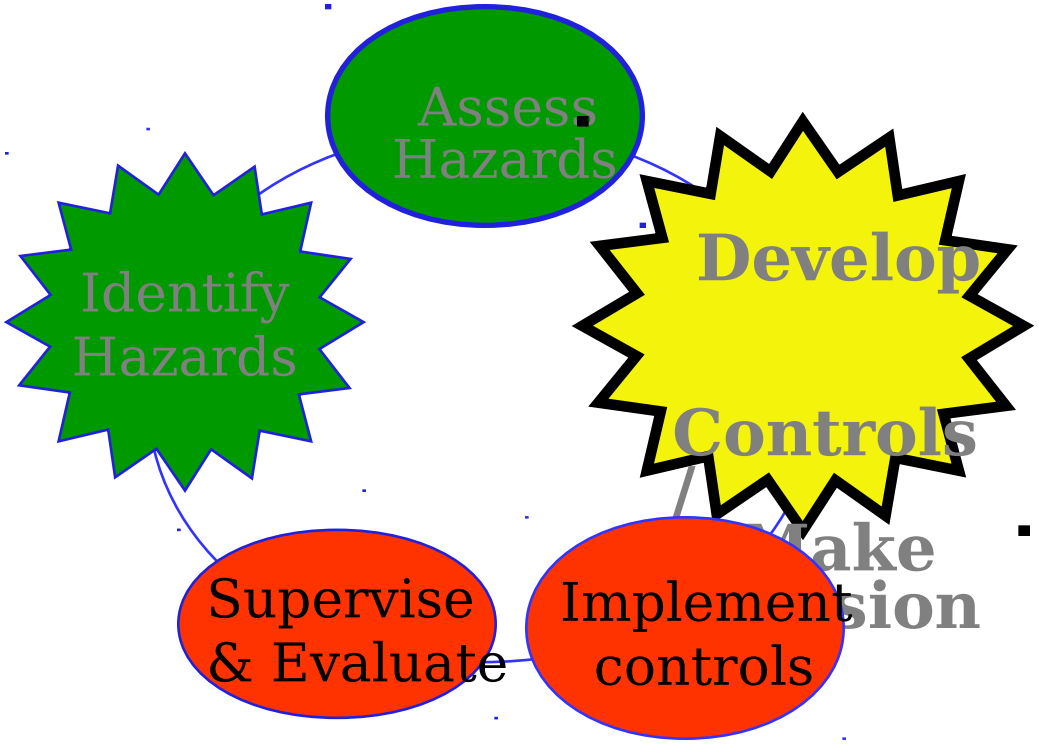
Low | Moderate | High | Extremely High

Risk Decision Authority

Effective?

The RM Process – Step Three

Step three:



- Identify Hazards
- Assess Hazards
- **Develop Controls/ Make Risk Decisions**
- Implement Controls
- Supervise & Evaluate

Step Three

Risk Management Worksheet

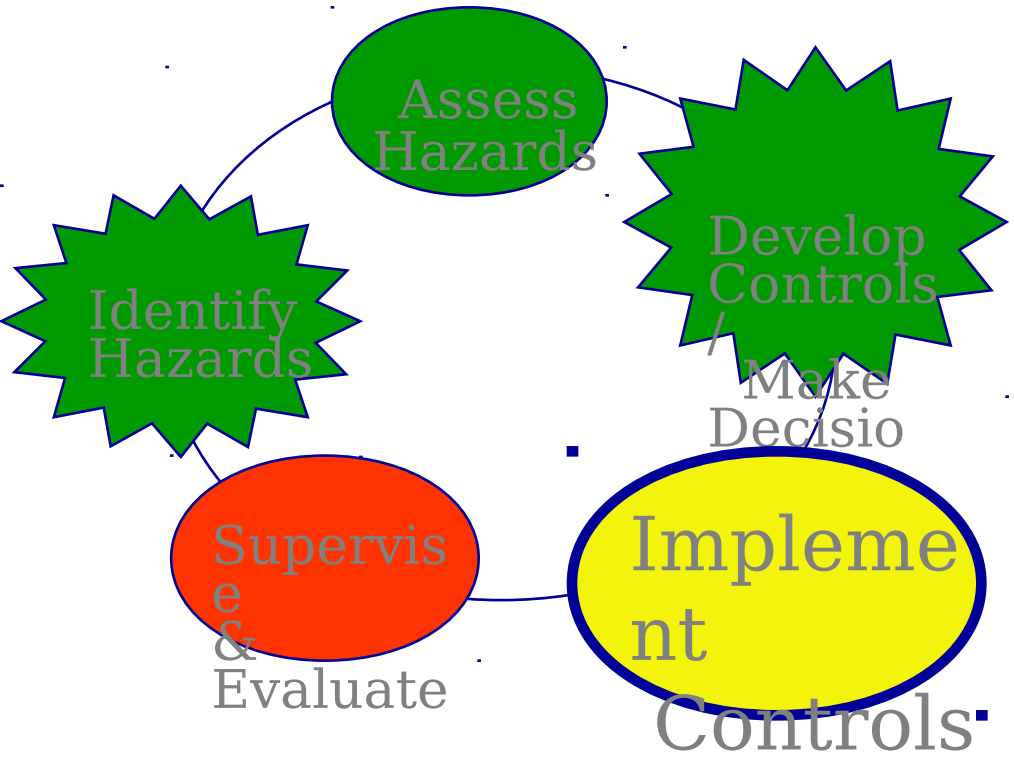
Hazards	Initial Risk Level	Controls	Residual Risk Level	How to Implement	How to Supervise
Xfer Highwy	H	**Rd guards/w vests&lights**	**M**		
Equip Ld	H	**Distrib load**	**M**		
90 Degs+	M	**Hydrate/Rest**	**L**		
Hills/Walk	H	**Good Route**	**L**		
20% New Troops	M	**Train to Standard**	**M**		
0500 Hrs		**Cat Eyes**			

Overall risk level after controls are implemented

Low | Moderate | High | Extremely High

Risk Decision Authority

The RM Process – Step Four



Step four:

- Assess Hazards
- Identify Hazards
- Develop Controls/ Make Decisions
- Implement Controls-- Integrate controls into:
  - **Plans**
  - **OPORDs**
  - **SOPs**
  - **Training performance standards**
  - **Rehearsals**
- Supervise & Evaluate

Step Four

Risk Management Worksheet

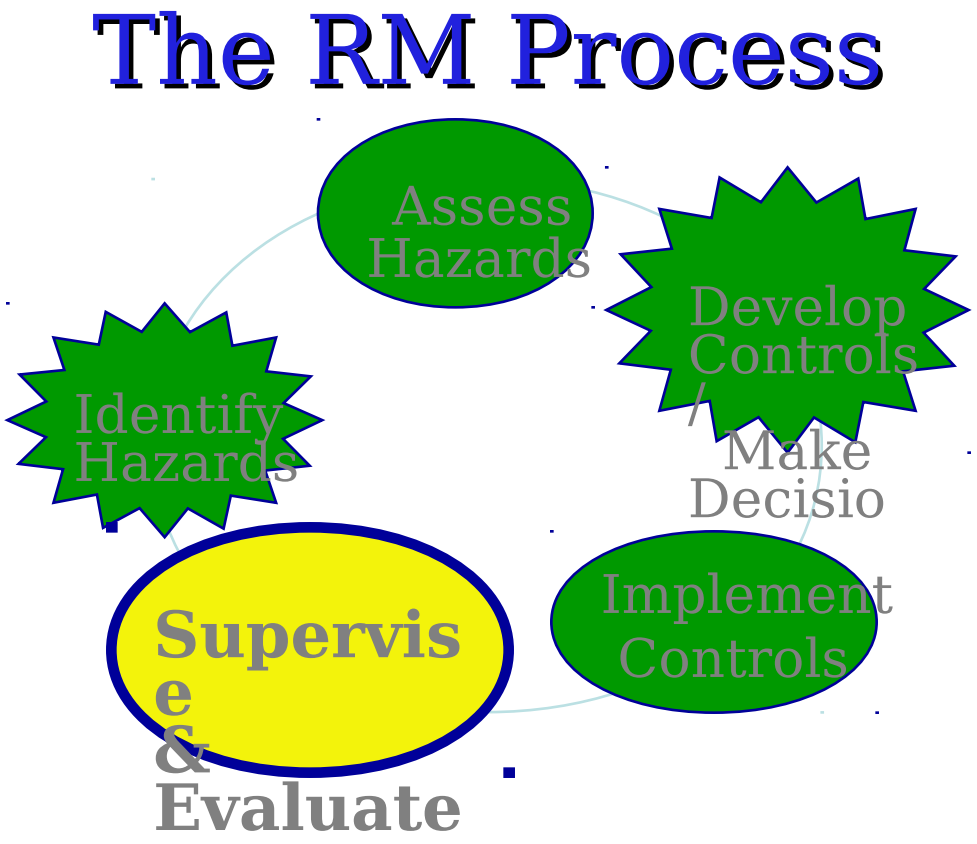
Hazards	Initial Risk Level	Controls	Residual Risk Level	How to Implement	How to Supervise
Controls Effective?					
X Major Highway	H	Rd Guard/ Tactical	M	**SOP**	
Equip Ld	H	Distr Ld	M	**Verbally**	
90 Degs+	M	Hydration	L	**FMs/TB**	
Hills/Walk	M	Good Route	L	**TACSOP**	
20% New Troops	H	Train to Standard	M	**TACSOP**	
0500 Hrs	M	Cat Eyes	L	**FM 21-18**	

Overall risk level after controls are implemented

Low | Moderate | High | Extremely High

Risk Decision Authority

The RM Process – Step Five



Step five:

- Identify Hazards
- Assess Hazards
- Develop Controls/ Make Decisions
- Implement Controls
- **Supervise & Evaluate**

Step Five

Risk Management Worksheet

Hazards	Initial Risk Level	Controls	Residual Risk Level	How to Implement	How to Supervise	Controls Effective?
X Major Highwy	H	Rd Guard/ Tactical	M	SOP	**Continuous**	**Y**
Equip Ld	H	Distr Ld	M	Verbally	**Supervision**	**Y**
90 Degs+	M	Hydrate/Rest	L	FMs/TB	**Cont Supv**	**Y**
	M		L	TACSOP		**Y**
Hills/Walk	H	Good Route	M	TACSOP	**Spot Chk**	**Y**
20% New Troops	M	Train to Standard	L	FM 21-18	**Cont Supv**	**Y**
0300 Hrs	-	Cat Eyes	-		**Cont Supv**	

Overall risk level after controls are implemented | Risk Decision Authority

Low | Moderate | High | Extremely High

Three Levels of RM Planning

Hasty RM Little time available	**Deliberate** RM Time available & significant risks	**In-Depth** RM High risk demanding action
Mentally applying the basic five step process in the context of the appropriate troop leading/decision-making process. - A meeting engagement	Designed to detect & control the risks of a specific mission usually including the following: - A mission analysis - A preliminary hazard list - COA analysis - Back briefs and rehearsals - Integrate controls in OPORDS, FRAGOS, SOPs, graphics, etc. Typical applications: - Deliberate attacks - Analysis of METL tasks	Detailed techniques incorporating deliberate RM procedures but going well beyond to assure maximum risk control. Typically limited to higher risk operations and requiring professional expertise. Typical Application: - New doctrinal concepts - New missions/METL tasks

Hazard Detection Resources and Tools

Hazard Detection Tools

- **Experience**
- **Experts**
- **Regs and manuals**
- **Accident data**
- **Hazard scenarios**
- **Risk assessment matrix**
- **Readiness assessments**
- **Safety quizzes**

- **Cause and effect diagram**
- **Change analysis**
- **Logic diagrams**
- **Mapping techniques**
- **What-if analysis**
- **Training realism assessment**
- **Opportunity assessment**

Risk Management Tools

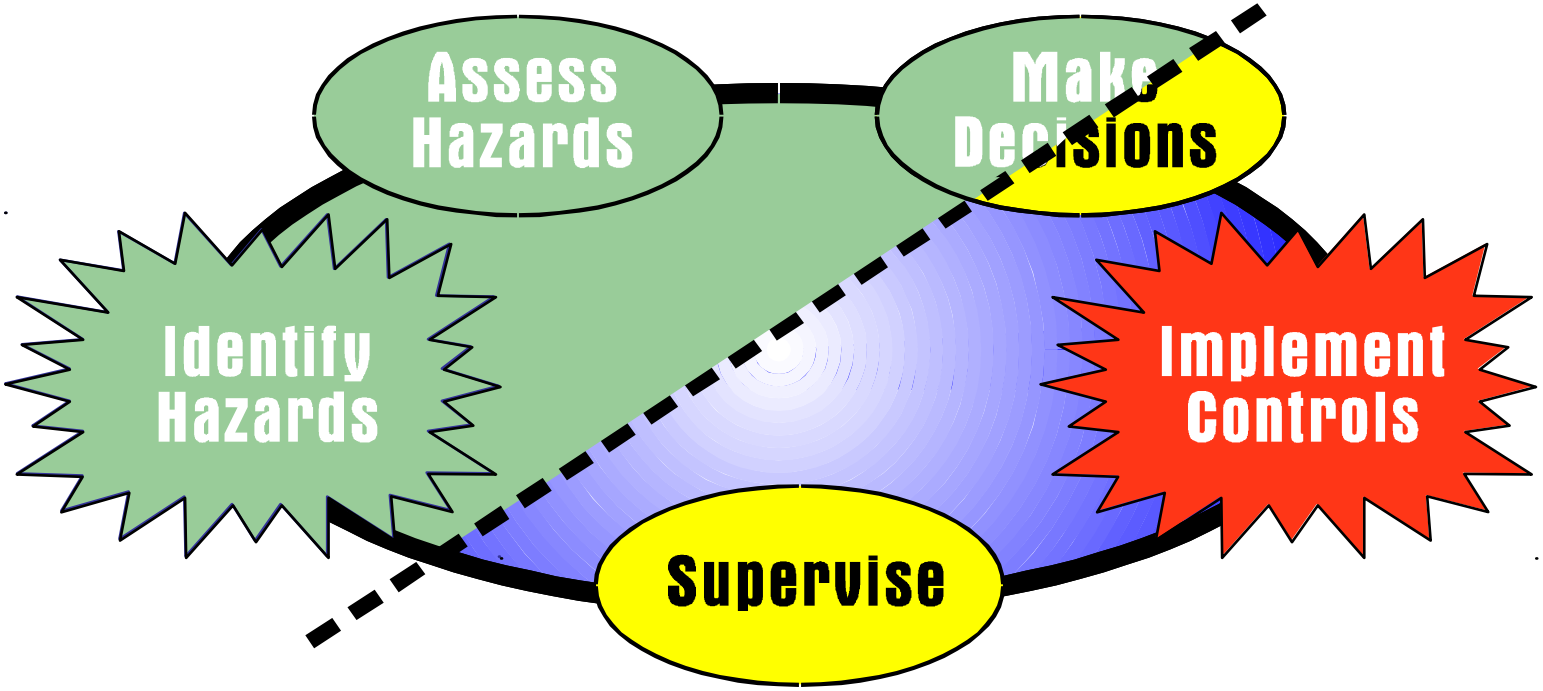
The Next Accident Assessment	Safety Knowledge Quiz	Unit Accident Patterns	CTC Performance	Integration in Battle Focused Training Processes
Provides self and leader-based assessment of potential for accident involvement	Assesses the status of critical force protection skills and knowledge	Focusing on past accident patterns in units of this kind. Learning from the mistakes of others	Focusing on successful force protection performance at the various training centers	Build risk management into the METL assessments and training plans IAW FM-25-101

Don’t Forget !

- Risk management is a process, **not** a form, a matrix, or a single action!
- Hazard/risk assessment **never** stops!
- Mission success depends on prudent risk taking, **not** gambling!
- The higher the risk, the **more senior** the decision maker!

The Challenge

Avoid a Breakdown in the Risk Management Process



Safety Websites

- First U.S. Army Safety Website
  - www.First.Army.mil.safety
- Forces Command Safety
  - http://www.forscom.army.mil/safety/
- United States Army Safety Center
  - http://safety.army.mil/home.html
- Army Regulations, DA Pam's, etc.
  - NOTE: Safety Regulation series is 385
  - AR 385-10, Army Safety Program
  - http://www.usapa.army.mil/

QUESTIONS ?